SEQUENCE LISTING

(1) GENERAL INFORMATION

    (i)   APPLICANT: Darrell Anderson, Nabil Hanna, John Leonard, Roland Newman and Mitchell Reff

    (ii)   TITLE OF INVENTION: THERAPEUTIC APPLICATION OF CHIMERIC ANTIBODY TO HUMAN B LYMPHOCYTE RESTRICTED DIFFERENTIATION ANTIGEN FOR TREATMENT OF B CELL LYMPHOMA

    (iii)   NUMBER OF SEQUENCES: 8

    (iv)   CORRESPONDING ADDRESS:

        (A)   ADDRESSEE: IDEC Pharmaceuticals Corporation
        (B)   STREET: 11099 N. Torrey Pines Road, #160
        (C)   CITY: La Jolla
        (D)   STATE: California
        (E)   COUNTRY: USA
        (F)   ZIP: 92037

    (v)   COMPUTER READABLE FORM:

        (A)   MEDIUM TYPE: Diskette, 3.5 inch, 1.44 Mb
        (B)   COMPUTER: Macintosh
        (C)   OPERATING SYSTEM: MS.DOS
        (D)   SOFTWARE: Microsoft Word 5.0

    (vi)   CURRENT APPLICATION DATA:

        (A)   APPLICATION NUMBER:
        (B)   FILING DATE:
        (C)   CLASSIFICATION:

    (viii)   ATTORNEY/AGENT INFORMATION:

        (A)   NAME: Burgoon, Richard P. Jr.
        (B)   REGISTRATION NUMBER: 34,787
        (C)   REFERENCE/DOCKET NUMBER:

    (ix)   TELECOMMUNICATION INFORMATION:

        (A)   TELEPHONE: (619) 458-0600
        (B)   TELEFAX: (619) 546-9274

(2)   INFORMATION FOR SEQ. ID. NO: 1:

    (i)   SEQUENCE CHARACTERISTICS:

        (A)   LENGTH: 8540 bases
        (B)   TYPE: nucleic acid
        (C)   STRANDEDNESS: single
        (D)   TOPOLOGY: circular

    (ii)   MOLECULE TYPE: DNA (genomic)

    (iii)   HYPOTHETICAL: ~~yes~~ no

    (iv)   ANTI-SENSE: no

    (ix)   SEQUENCE DESCRIPTION: SEQ. ID. NO: 1:

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(3)   INFORMATION FOR SEQ. ID. NO: 2:

    (i)   SEQUENCE CHARACTERISTICS:

        (A)   LENGTH: 9209 bases
        (B)   TYPE: nucleic acid
        (C)   STRANDEDNESS: single
        (D)   TOPOLOGY: circular

    (ii)   MOLECULE TYPE: DNA (genomic)

    (iii)   HYPOTHETICAL: ~~yes~~ no

    (iv)   ANTI-SENSE: no

    (ix)   SEQUENCE DESCRIPTION: SEQ. ID. NO: 2:

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      AGGAAAATTA ATTTTAACAC CAATTCAGTA GTTGATTGAG CAAATGCGTT GCCAAAAAGG    4260

      ATGCTTTAGA GACAGTGTTC TCTGCACAGA TAAGGACAAA CATTATTCAG AGGGAGTACC    4320

10    CAGAGCTGAG ACTCCTAAGC CAGTGAGTGG CACAGCATTC TAGGGAGAAA TATGCTTGTC    4380

      ATCACCGAAG CCTGATTCCG TAGAGCCACA CCTTGGTAAG GGCCAATCTG CTCACACAGG    4440

15    ATAGAGAGGG CAGGAGCCAG GGCAGAGCAT ATAAGGTGAG GTAGGATCAG TTGCTCCTCA    4500

      CATTTGCTTC TGACATAGTT GTGTTGGGAG CTTGGATAGC TTGGACAGCT CAGGGCTGCG    4560

      ATTTCGCGCC AAACTTGACG GCAATCCTAG CGTGAAGGCT GGTAGGATTT TATCCCCGCT    4620

20    GCCATCATGG TTCGACCATT GAACTGCATC GTCGCCGTGT CCCAAAATAT GGGGATTGGC    4680

      AAGAACGGAG ACCTACCCTG GCCTCCGCTC AGGAACGAGT TCAAGTACTT CCAAAGAATG    4740

25    ACCACAACCT CTTCAGTGGA AGGTAAACAG AATCTGGTGA TTATGGGTAG GAAAACCTGG    4800

      TTCTCCATTC CTGAGAAGAA TCGACCTTTA AAGGACAGAA TTAATATAGT TCTCAGTAGA    4860

      GAACTCAAAG AACCACCACG AGGAGCTCAT TTTCTTGCCA AAAGTTTGGA TGATGCCTTA    4920

30    AGACTTATTG AACAACCGGA ATTGGCAAGT AAAGTAGACA TGGTTTGGAT AGTCGGAGGC    4980

      AGTTCTGTTT ACCAGGAAGC CATGAATCAA CCAGGCCACC TTAGACTCTT TGTGACAAGG    5040

35    ATCATGCAGG AATTTGAAAG TGACACGTTT TTCCCAGAAA TTGATTTGGG GAAATATAAA    5100

      CTTCTCCCAG AATACCCAGG CGTCCTCTCT GAGGTCCAGG AGGAAAAAGG CATCAAGTAT    5160

40    AAGTTTGAAG TCTACGAGAA GAAAGACTAA CAGGAAGATG CTTTCAAGTT CTCTGCTCCC    5220

      CTCCTAAAGC TATGCATTTT TATAAGACCA TGGGACTTTT GCTGGCTTTA GATCAGCCTC    5280

      GACTGTGCCT TCTAGTTGCC AGCCATCTGT TGTTTGCCCC TCCCCGTGC CTTCCTTGAC    5340

45    CCTGGAAGGT GCCACTCCCA CTGTCCTTTC CTAATAAAAT GAGGAAATTG CATCGCATTG    5400

      TCTGAGTAGG TGTCATTCTA TTCTGGGGGG TGGGGTGGGG CAGGACAGCA AGGGGGAGGA    5460

50    TTGGGAAGAC AATAGCAGGC ATGCTGGGGA TGCGGTGGGC TCTATGGAAC CAGCTGGGGC    5520

      TCGAGCTACT AGCTTTGCTT CTCAATTTCT TATTTGCATA ATGAGAAAAA AAGGAAAATT    5580

      AATTTTAACA CCAATTCAGT AGTTGATTGA GCAAATGCGT TGCCAAAAAG GATGCTTTAG    5640

55    AGACAGTGTT CTCTGCACAG ATAAGGACAA ACATTATTCA GAGGGAGTAC CCAGAGCTGA    5700

      GACTCCTAAG CCAGTGAGTG GCACAGCATT CTAGGGAGAA ATATGCTTGT CATCACCGAA    5760
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GCCTGATTCC GTAGAGCCAC ACCTTGGTAA GGGCCAATCT GCTCACACAG GATAGAGAGG   5820

GCAGGAGCCA GGGCAGAGCA TATAAGGTGA GGTAGGATCA GTTGCTCCTC ACATTTGCTT   5880

CTGACATAGT TGTGTTGGGA GCTTGGATCG ATCCTCTATG GTTGAACAAG ATGGATTGCA   5940

CGCAGGTTCT CCGGCCGCTT GGGTGGAGAG GCTATTCGGC TATGACTGGG CACAACAGAC   6000

AATCGGCTGC TCTGATGCCG CCGTGTTCCG GCTGTCAGCG CAGGGGCGCC CGGTTCTTTT   6060

TGTCAAGACC GACCTGTCCG GTGCCCTGAA TGAACTGCAG GACGAGGCAG CGCGGCTATC   6120

GTGGCTGGCC ACGACGGGCG TTCCTTGCGC AGCTGTGCTC GACGTTGTCA CTGAAGCGGG   6180

AAGGGACTGG CTGCTATTGG GCGAAGTGCC GGGGCAGGAT CTCCTGTCAT CTCACCTTGC   6240

TCCTGCCGAG AAAGTATCCA TCATGGCTGA TGCAATGCGG CGGCTGCATA CGCTTGATCC   6300

GGCTACCTGC CCATTCGACC ACCAAGCGAA ACATCGCATC GAGCGAGCAC GTACTCGGAT   6360

GGAAGCCGGT CTTGTCGATC AGGATGATCT GGACGAAGAG CATCAGGGGC TCGCGCCAGC   6420

CGAACTGTTC GCCAGGCTCA AGGCGCGCAT GCCCGACGGC GAGGATCTCG TCGTGACCCA   6480

TGGCGATGCC TGCTTGCCGA ATATCATGGT GGAAAATGGC CGCTTTTCTG GATTCATCGA   6540

CTGTGGCCGG CTGGGTGTGG CGGACCGCTA TCAGGACATA GCGTTGGCTA CCCGTGATAT   6600

TGCTGAAGAG CTTGGCGGCG AATGGGCTGA CCGCTTCCTC GTGCTTTACG GTATCGCCGC   6660

TCCCGATTCG CAGCGCATCG CCTTCTATCG CCTTCTTGAC GAGTTCTTCT GAGCGGGACT   6720

CTGGGGTTCG AAATGACCGA CCAAGCGACG CCCAACCTGC CATCACGAGA TTTCGATTCC   6780

ACCGCCGCCT TCTATGAAAG GTTGGGCTTC GGAATCGTTT TCCGGGACGC CGGCTGGATG   6840

ATCCTCCAGC GCGGGGATCT CATGCTGGAG TTCTTCGCCC ACCCCAACTT GTTTATTGCA   6900

GCTTATAATG GTTACAAATA AAGCAATAGC ATCACAAATT TCACAAATAA AGCATTTTTT   6960

TCACTGCATT CTAGTTGTGG TTTGTCCAAA CTCATCAATC TATCTTATCA TGTCTGGATC   7020

GCGGCCGCGA TCCCGTCGAG AGCTTGGCGT AATCATGGTC ATAGCTGTTT CCTGTGTGAA   7080

ATTGTTATCC GCTCACAATT CCACACAACA TACGAGCCGG AAGCATAAAG TGTAAAGCCT   7140

GGGGTGCCTA ATGAGTGAGC TAACTCACAT TAATTGCGTT GCGCTCACTG CCCGCTTTCC   7200

AGTCGGGAAA CCTGTCGTGC CAGCTGCATT AATGAATCGG CCAACGCGCG GGGAGAGGCG   7260

GTTTGCGTAT TGGGCGCTCT TCCGCTTCCT CGCTCACTGA CTCGCTGCGC TCGGTCGTTC   7320

GGCTGCGGCG AGCGGTATCA GCTCACTCAA AGGCGGTAAT ACGGTTATCC ACAGAATCAG   7380

GGGATAACGC AGGAAAGAAC ATGTGAGCAA AAGGCCAGCA AAAGGCCAGG AACCGTAAAA   7440

AGGCCGCGTT GCTGGCGTTT TTCCATAGGC TCCGCCCCCC TGACGAGCAT CACAAAAATC   7500
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GACGCTCAAG  TCAGAGGTGG  CGAAACCCGA  CAGGACTATA  AAGATACCAG  GCGTTTCCCC   7560

CTGGAAGCTC  CCTCGTGCGC  TCTCCTGTTC  CGACCCTGCC  GCTTACCGGA  TACCTGTCCG   7620

CCTTTCTCCC  TTCGGGAAGC  GTGGCGCTTT  CTCAATGCTC  ACGCTGTAGG  TATCTCAGTT   7680

CGGTGTAGGT  CGTTCGCTCC  AAGCTGGGCT  GTGTGCACGA  ACCCCCCGTT  CAGCCCGACC   7740

GCTGCGCCTT  ATCCGGTAAC  TATCGTCTTG  AGTCCAACCC  GGTAAGACAC  GACTTATCGC   7800

CACTGGCAGC  AGCCACTGGT  AACAGGATTA  GCAGAGCGAG  GTATGTAGGC  GGTGCTACAG   7860

AGTTCTTGAA  GTGGTGGCCT  AACTACGGCT  ACACTAGAAG  GACAGTATTT  GGTATCTGCG   7920

CTCTGCTGAA  GCCAGTTACC  TTCGGAAAAA  GAGTTGGTAG  CTCTTGATCC  GGCAAACAAA   7980

CCACCGCTGG  TAGCGGTGGT  TTTTTTGTTT  GCAAGCAGCA  GATTACGCGC  AGAAAAAAAG   8040

GATCTCAAGA  AGATCCTTTG  ATCTTTTCTA  CGGGGTCTGA  CGCTCAGTGG  AACGAAAACT   8100

CACGTTAAGG  GATTTTGGTC  ATGAGATTAT  CAAAAAGGAT  CTTCACCTAG  ATCCTTTTAA   8160

ATTAAAAATG  AAGTTTTAAA  TCAATCTAAA  GTATATATGA  GTAAACTTGG  TCTGACAGTT   8220

ACCAATGCTT  AATCAGTGAG  GCACCTATCT  CAGCGATCTG  TCTATTTCGT  TCATCCATAG   8280

TTGCCTGACT  CCCCGTCGTG  TAGATAACTA  CGATACGGGA  GGGCTTACCA  TCTGGCCCCA   8340

GTGCTGCAAT  GATACCGCGA  GACCCACGCT  CACCGGCTCC  AGATTTATCA  GCAATAAACC   8400

AGCCAGCCGG  AAGGGCCGAG  CGCAGAAGTG  GTCCTGCAAC  TTTATCCGCC  TCCATCCAGT   8460

CTATTAATTG  TTGCCGGGAA  GCTAGAGTAA  GTAGTTCGCC  AGTTAATAGT  TTGCGCAACG   8520

TTGTTGCCAT  TGCTACAGGC  ATCGTGGTGT  CACGCTCGTC  GTTTGGTATG  GCTTCATTCA   8580

GCTCCGGTTC  CCAACGATCA  AGGCGAGTTA  CATGATCCCC  CATGTTGTGC  AAAAAAGCGG   8640

TTAGCTCCTT  CGGTCCTCCG  ATCGTTGTCA  GAAGTAAGTT  GGCCGCAGTG  TTATCACTCA   8700

TGGTTATGGC  AGCACTGCAT  AATTCTCTTA  CTGTCATGCC  ATCCGTAAGA  TGCTTTTCTG   8760

TGACTGGTGA  GTACTCAACC  AAGTCATTCT  GAGAATAGTG  TATGCGGCGA  CCGAGTTGCT   8820

CTTGCCCGGC  GTCAATACGG  GATAATACCG  CGCCACATAG  CAGAACTTTA  AAAGTGCTCA   8880

TCATTGGAAA  ACGTTCTTCG  GGGCGAAAAC  TCTCAAGGAT  CTTACCGCTG  TTGAGATCCA   8940

GTTCGATGTA  ACCCACTCGT  GCACCCAACT  GATCTTCAGC  ATCTTTTACT  TTCACCAGCG   9000

TTTCTGGGTG  AGCAAAAACA  GGAAGGCAAA  ATGCCGCAAA  AAAGGGAATA  AGGGCGACAC   9060

GGAAATGTTG  AATACTCATA  CTCTTCCTTT  TTCAATATTA  TTGAAGCATT  TATCAGGGTT   9120

ATTGTCTCAT  GAGCGGATAC  ATATTTGAAT  GTATTTAGAA  AAATAAACAA  ATAGGGGTTC   9180

CGCGCACATT  TCCCCGAAAA  GTGCCACCT                                        9209
```

(4)   INFORMATION FOR SEQ. ID. NO: 3:

    (i)   SEQUENCE CHARACTERISTICS:

        (A)   LENGTH: 54 bases
        (B)   TYPE: nucleic acid
        (C)   STRANDEDNESS: single
        (D)   TOPOLOGY: linear

    (ii)   MOLECULE TYPE: DNA (genomic)

    (iii)   HYPOTHETICAL: ~~yes~~ no

    (iv)   ANTI-SENSE: no

    (ix)   SEQUENCE DESCRIPTION: SEQ. ID. NO: 3:

5' ATC ACA GAT CTC TCA CCA TGG ATT TTC AGG TBC AGA TTA TCA GCT   52
TC 3'   54

(5)   INFORMATION FOR SEQ. ID. NO: 4:

    (i)   SEQUENCE CHARACTERISTICS:

        (A)   LENGTH: 30 bases
        (B)   TYPE: nucleic acid
        (C)   STRANDEDNESS: single
        (D)   TOPOLOGY: linear

    (ii)   MOLECULE TYPE: DNA (genomic)

    (iii)   HYPOTHETICAL: ~~yes~~ no

    (iv)   ANTI-SENSE: yes

    (ix)   SEQUENCE DESCRIPTION: SEQ. ID. NO: 4:

5' TGC AGC ATC CGT ACG TTT GAT TTC CAG CTT 3'   30

(6)   INFORMATION FOR SEQ. ID. NO: 5:

    (i)   SEQUENCE CHARACTERISTICS:

        (A)   LENGTH: 384 bases
        (B)   TYPE: nucleic acid
        (C)   STRANDEDNESS: single
        (D)   TOPOLOGY: linear

(ii)   MOLECULE TYPE: DNA (genomic)

(iii)   HYPOTHETICAL: yes

(iv)   ANTI-SENSE: no

(ix)   SEQUENCE DESCRIPTION: SEQ. ID. NO: 5:

```
ATG GAT TTT CAG GTG CAG ATT ATC AGC TTC CTG CTA ATC AGT GCT TCA GTC       51

ATA ATG TCC AGA GGG CAA ATT GTT CTC TCC CAG TCT CCA GCA ATC CTG TCT      102

GCA TCT CCA GGG GAG AAG GTC ACA ATG ACT TGC AGG GCC AGC TCA AGT GTA      153

AGT TAC ATC CAC TGG TTC CAG CAG AAG CCA GGA TCC TCC CCC AAA CCC TGG      204

ATT TAT GCC ACA TCC AAC CTG GCT TCT GGA GTC CCT GTT CGC TTC AGT GGC      255

AGT GGG TCT GGG ACT TCT TAC TCT CTC ACA ATC AGC AGA GTG GAG GCT GAA      306

GAT GCT GCC ACT TAT TAC TGC CAG CAG TGG ACT AGT AAC CCA CCC ACG TTC      357

GGA GGG GGG ACC AAG CTG GAA ATC AAA                                       384
```

(7)   INFORMATION FOR SEQ. ID. NO: 6:

(i)   SEQUENCE CHARACTERISTICS:

(A)   LENGTH: 27 bases
(B)   TYPE: nucleic acid
(C)   STRANDEDNESS: single
(D)   TOPOLOGY: linear

(ii)   MOLECULE TYPE: DNA (genomic)

(iii)   HYPOTHETICAL: yes

(iv)   ANTI-SENSE: no

(ix)   SEQUENCE DESCRIPTION: SEQ. ID. NO.: 6:

```
5' GCG GCT CCC ACG CGT GTC CTG TCC CAG 3'                                  27
```

(8) INFORMATION FOR SEQ. ID. NO: 7:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 29 bases
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: yes

(iv) ANTI-SENSE: yes

(ix) SEQUENCE DESCRIPTION: SEQ. ID. NO: 7:

~~5' GG(G/C) TGT TGT GGT AGC TC(A/G) (A/G)GA GAC (G/A)GT GA 3'~~   29

(9) INFORMATION FOR SEQ. ID. NO: 8:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 420 bases
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: yes

(iv) ANTI-SENSE: no

(ix) SEQUENCE DESCRIPTION: SEQ. ID. NO: 8:

```
ATG GGT TGG AGC CTC ATC TTG CTC TTC CTT GTC GCT GTT GCT ACG CGT GTC    51

CTG TCC CAG GTA CAA CTG CAG CAG CCT GGG GCT GAG CTG GTG AAG CCT GGG   102

GCC TCA GTG AAG ATG TCC TGC AAG GCT TCT GGC TAC ACA TTT ACC AGT TAC   153

AAT ATG CAC TGG GTA AAA CAG ACA CCT GGT CGG GGC CTG GAA TGG ATT GGA   204

GCT ATT TAT CCC GGA AAT GGT GAT ACT TCC TAC AAT CAG AAG TTC AAA GGC   255

AAG GCC ACA TTG ACT GCA GAC AAA TCC TCC AGC ACA GCC TAC ATG CAG CTC   306

AGC AGC CTG ACA TCT GAG GAC TCT GCG GTC TAT TAC TGT GCA AGA TCG ACT   357
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TAC TAC GGC GGT GAC TGG TAC TTC AAT GTC TGG GGC GCA GGG ACC ACG GTC   408

ACC GTC TCT GCA   420